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Requirements for Factored Items Requiring a Quality Release

Revision Number	0
Date	02-12-92
Amendment Details	Initial Issue
Revision Number	1
Date	31-01-95
Amendment Details	Para 5 added – EU Directives
Revision Number	2
Date	30-10-98
Amendment Details	Para 6.0 added Y2K
Revision Number	3
Date	02-10-02
Amendment Details	Para 2.0 and 3.1 ISO updates. 5.1. Changes to EU Directive. 6.0 Year 2000 compliance taken out.
Revision Number	4
Date	25-03-09
Amendment Details	Para 4.4 modified to include amended details regarding the notification period
Revision Number	5
Date	19-09-13
Amendment Details	ISO 9001:2000 changed to ISO 9001:2008 in paragraphs 2.0 and 3.1. SLQ-210.01 changed to SLQ-210-01 in paragraph 8.2.
Revision Number	6
Date	21-11-13
Amendment Details	Section 7 added.
Revision Number	7
Date	10-02-14
Amendment Details	Section 4 replaced, Section 8 Font Size and section 9.2 SLQ 210-01 not 210.01.
Revision Number	8
Date	28-08-14
Amendment Details	Sections 8.2 & 8.8 amended. Section 8.10 (Traceability) added. Manufacturing Record Dossier changed to Manufacturing Record Book.
Revision Number	9
Date	19-03-15
Amendment Details	Complete review of entire document.
Revision Number	10
Date	12-10-2022
Amendment Details	Section 2 Reference to ISO 9001, "Latest Issue" added. Sections 2 & 8.8 Reference to SQA 40-399 amended to PS-1301. Section 4.5 Reference to SLQ-1143 amended to LPE-207. Section 7.3 Reference to SLE-1523 amended to LPE-941 and link amended. Section 8.2 Reference to SLQ-1488 amended to LPE-940. Section 8.8 Reference to SLQ-1487 amended to LPE-329. Section 8.10.1 Reference to SLQ-1489 amended to LPE-263. Section 9.2 Reference to SLQ-210-01 amended to LPE-147.

Issued by: E. Heald

Approved by: R. Connor

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1.0	Scope
	This specification details the Quality Assurance requirements applicable to suppliers of factored items requiring formal documented release from Sulzer prior to despatch from supplier's premises.
	Unless otherwise specified, where Sulzer client's equipment specifications conflict with the requirements of this document, the client's requirements shall take precedence.
2.0	References
	This specification makes reference to the following:-
	ISO 9001 Latest Issue - Quality Management Systems, Requirements
	Global Directives - As applicable
	The following specifications can be downloaded from: http://www.sulzer.com/q-documents
	Sulzer Specification LPE-147 - Supplier Quality Release Form
	Sulzer Specification LPE-207 - Supplier Inspection Notification
	Sulzer Specification LPE-263 - Supplier Traceability Record
	Sulzer Specification LPE-329 - Supplier Hazardous Area Schedule
	Sulzer Specification LPE-940 - Supplier MRB Index
	Sulzer Specification LPE-941 - Sulzer Data Sheet
	Sulzer Specification PS-1301 - Certification of electrical equipment for installation in hazardous areas
3.0	Quality System
3.1	Suppliers are required to implement Quality Management Systems meeting the requirements of ISO 9001 Latest Issue or recognised international equivalents as appropriate to the supply of goods or services detailed in Sulzer's Purchase Order.
3.2	Suppliers are responsible for passing on the appropriate Quality Assurance requirements to their sub-suppliers.
3.3	Sulzer reserves the right to request review and retain for the duration of the Purchase Order a controlled copy of the supplier's Quality Manual or an equivalent document and also to perform audits to verify satisfactory implementation of the Quality System.
4.0	Inspection
4.1	The equipment and/or materials specified in the Purchase Order may be subject to inspection by Sulzer and/or their client's representatives. Such inspections do not relieve the Supplier from obligations to ensure compliance with specifications/purchase order requirements.
4.2	Minimum Witness inspection requirements shall be as detailed in the Purchase Order, ITP or associated documentation.
4.3	Sulzer and/or their client's representatives shall be afforded access and assistance at all reasonable times throughout the duration of the Purchase Order to carry out inspection and tests at the supplier's and/or sub-supplier's premises.
4.4	Where "Witness" or "Hold" points have been assigned, the supplier shall notify Sulzer giving the full notification period stated within the Purchase Order (or associated documentation). Notification may be given prior to the actual supplier internal inspection / test, however, a minimum of three working days shall be given between successful supplier internal test / inspection (where applicable) and witness inspection to allow for cancellation if required (unless agreed in writing with Sulzer). During the notification period the supplier will ensure any issues that could affect the witness inspection date are discussed and communicated to Sulzer.

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4.5	Notification for inspections shall be advised to Sulzer using Supplier Inspection Notification form LPE-207 , which is available via the Sulzer supplier download page (http://www.sulzer.com/q-documents)
4.6	Suppliers shall be liable for all costs incurred by Sulzer associated with late cancellation or aborted inspection visits.
4.7	When required it shall be the responsibility of the supplier to liaise with a Certifying Authority, providing information and access to works and personnel so as to satisfy the requirements of the applicable codes.
4.8	Prior to release the supplier is to inspect the equipment against the latest Sulzer reviewed drawing. Any dimensions which are outside the tolerance stated on the drawing must be formalised with a concession prior to shipment or clearly identified on the submitted quality release document. In the event that deviations are accepted, an "as built" drawing is to be provided within 2 weeks.
4.9	During final inspection the attached final inspection checklists to be completed by both the supplier and the Sulzer Inspector. Any non-conforming items are to be detailed in a punch list attached to the inspection report.
5.0	Global Directives
5.1	All equipment and services supplied to Sulzer must be in accordance with all applicable Global Directives (e.g., UKCA, CE etc.) and supplied with appropriate declarations. It is the responsibility of the Supplier to identify those directives applicable to the equipment and services supplied.
6.0	Document Submission
6.1	Documentation requiring submission for review and/or approval by Sulzer and/or their client shall be identified in the Purchase Order equipment specifications.
7.0	Vendor Drawings
7.1	General Arrangement Drawing format
7.1.1	Vendor drawings should normally be provided to Sulzer, drawn to scale, in pdf format. When the Vendor's drawing details are to be incorporated into a Sulzer drawing (e.g., motor GA, gearbox GA, seal system GA, lube-oil System GA, cooler etc) the drawing is also required in native CAD format (dwg/dxf) to avoid scaling and redrawing from pdf print.
7.1.2	All drawings must be dimensioned and all key dimensions (overall sizes, holding down hole locations, interface and termination points, items requiring maintenance access) must have toleranced dimensions with respect to a datum. The tolerances should be as detailed below or tighter:- ➤ Dimensional tolerances - +/-3mm ➤ Angular tolerances – +/-0.5 degree
7.1.3	To ensure that the submitted General Arrangement drawings support the requirements of the Project during its various engineering phases they must include sufficient clear and certified information at each submission. It is accepted that the initial issue of General Arrangement drawings may not be fully detailed but it is essential that the information given in the early issues is certified or, when it is not possible to certify a dimension or a weight, that realistic minimum and maximum figures are stated. If a "typical" or "Preliminary" GA is provided then it must be marked as being for use on the Project, the certified dimensions, maximums & minimums indicated and the name of the Vendors' Engineer with date included. Failure to comply will result in the drawing being rejected. If subsequent GA submissions are submitted under a different drawing number then for traceability the new drawing must contain a note stating that it supersedes the previous drawing number. All changes must be clearly indicated at each revision, either on the drawing or under cover of a separate summary submitted with the revised drawing. The expected contents of GA drawings are detailed below for various types of equipment.

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7.2	Piping and Instrumentation Diagrams (P&ID)
7.2.1	Accepted practise is that Vendor's P&IDs are incorporated into the Sulzer P&ID (the exception being on projects involving fluid couplings where their complexity requires the P&ID to be a separate document). In the early stages of a project the initial version of the P&ID may reflect only preliminary vendor information and the initial issue of the Sulzer P&ID will contain a note to the effect <i>"Preliminary details for Lube Oil System / Seal Oil System. Detail may change on receipt of vendors design information"</i>. The Sulzer P&ID will be revised to remove the note and reflect the agreed scope and functionality when the Vendor's project specific P&ID becomes available. Compliance with Project Specifications is the responsibility of the vendor. Deviations & clarifications must be highlighted and agreed with Sulzer.
7.3	Instrumentation Data Sheets
	For all equipment fitted with instrumentation the details of each instrument are to be furnished to Sulzer on Client's Data Sheet Format or, in the absence of a client format, on a Sulzer Data Sheet ref LPE-941). The Sulzer data sheet can be downloaded from Sulzer supplier download page (http://www.sulzer.com/q-documents). For vendor equipment where instrumentation is being supplied and fitted by Sulzer the appropriate Sulzer Data Sheets defining insertion depths and stand-off details - supplied during the execution of the project – are to be completed for each Sulzer supplied instrument.
7.4	Motor GA Drawings
7.4.1	The following should be contained on the first issue of the GA drawing: 1. Preferably a fully certified General Arrangement. If marked as Preliminary it will be rejected unless key dimensions are certified minimum or maximum figures with Engineer's name & date. 2. Overall dimensions + key interface dimensions, e.g., shaft end to foot/mounting hole. 3. Plan view of motor. 4. Shaft end details (including tolerance & keyway) or for 'o' ring / Hydraulic drive couplings, the 'o' ring detail, drive up dimensions + tolerances, drive up force, hub expansion force, hub outside diameter, retaining nut details where applicable & the motor shaft and coupling hub materials. 5. Horizontal motor. Foot details (including length, width, thickness and height from centre line). 6. Vertical motor. Mounting flange details including spigot size, flange thickness and clear access to bolting. 7. Foundation/mounting flange bolt hole size, location & number (with tolerance relative to the shaft end if not slotted to allow pre-drilling of baseplate and interchangeability) Vendor to recommend bolt size and minimum strength grade. 8. Weight (if not certified advise maximum) and Centre of Gravity dimensioned from suitable datum point (wet & dry as appropriate) and static / dynamic foot loadings. 9. Direction of rotation. 10. For pressure fed bearings oil flow rate, oil heat load, ISO VG grade and supply pressure. 11. Location, size and connection details of bearing oil supply & return connections. 12. For water cooled motors - water flow rate. 13. Frame size & designation, power, speed at rated pump power, voltage, phase & frequency. Area Classification and ATEX details if applicable. 14. Cable entry positions for main junction boxes. 15. Sulzer Order Number (100XXXXXX-XXXX) and Sulzer P.O. Number (4501XXXXXX). This information is given on the purchase order. 16. Indication of maximum coupling half weight limit. 17. Provisional maintenance weights & withdrawal dimensions for maintenance purposes 18. For motors with sleeve bearings rotor float, magnetic restoring force details (force vs displacement).

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	19. For motors with sleeve bearings installed on floating installations (FFPSO etc) state the magnitude of the axial loads imposed by the motor rotor that are to be restrained by the driven equipment through the drive coupling. 20. Client decal.
7.4.2	The following may be added during subsequent issues of the GA drawing: 1. Jacking Screw size, position, number & dowel hole details to enable levelling shims to be designed. 2. Lifting point details (thickness, shackle hole size, profile radius, tapping etc). 3. Cable entry positions for auxiliary junction boxes with box cover opening space requirements. 4. For water cooled motors. Connection details (location, size, flange details etc.) together with flow rate, inlet temperature, outlet temperature and pressure drop. 5. Auxiliary connection details (e.g., purge air). 6. Thermal growth details when applicable to enable allowance to be made to initial location of driven equipment. 7. Provision for coupling guard mounting - tapped holes or similar. 8. Final maintenance weights & withdrawal dimensions for maintenance purposes. 9. Earthing boss details.
7.5	Gearbox GA Drawings
7.5.1	The following should be contained on the first issue of the GA drawing: 1. Preferably a fully certified General Arrangement. If marked as Preliminary it will be rejected unless key dimensions are certified minimum or maximum figures with Engineer's name & date. 2. Overall dimensions + key dimensions, e.g., shaft end to foot/mounting hole, shaft centres. 3. Plan view of gearbox. 4. Shaft end details (including tolerance & keyway) or for 'o' ring / Hydraulic drive couplings, the 'o' ring detail, drive up dimensions + tolerances, drive up force, hub expansion force, hub outside diameter, retaining nut details where applicable & the gearbox shaft and coupling hub materials. 5. Foot details (including length, width, thickness and height from centre line.). 6. Foundation bolt hole size, location & number (with tolerance relative to the shaft end to allow pre-drilling of baseplate and interchangeability to allow pre-drilling of baseplate) Vendor to recommend bolt size and minimum strength grade. 7. Weight (if not certified advise maximum) and Centre of Gravity dimensioned from suitable datum point (wet & dry as appropriate) and static / dynamic foot loadings. 8. Direction of rotation on input & output shafts. 9. For pressure fed bearings oil flow rate, oil heat load ISO VG grade and supply pressure. 10. Location, size and connection details of bearing oil supply & return connections. 11. Frame size & designation. Area Classification and ATEX details if applicable. 12. Cable entry positions for main junction boxes. 21. Sulzer Order Number (100XXXXXX-XXXX) and Sulzer P.O. Number (4501XXXXXX). This information is given on the purchase order. 13. Indication of maximum coupling half weight limits for each shaft. 14. Provisional maintenance weights & withdrawal dimensions for maintenance purposes 15. Client decal.

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7.5.2	The following may be added during subsequent issues of the GA drawing: 1. Cooling water connection details (location, size, flange details etc). 2. Jacking Screw size, position, number & dowel hole details to enable levelling shims to be designed. 3. Lifting point details (thickness, shackle hole size, profile radius, tapping etc). 4. Cable entry positions for auxiliary junction boxes with box cover opening space requirements. 5. For water cooled gearboxes advise flow rate, inlet temperature, outlet temperature and pressure drop. 6. Thermal growth details when applicable to enable allowance to be made to initial location of driver & driven equipment. 7. Provision for coupling guard mounting – tapped holes or similar. 8. Final maintenance weights & withdrawal dimensions for maintenance purposes. 9. Earthing boss details.
7.6	Lube Oil System GA Drawings
7.6.1	The following should be contained on the first issue of the GA drawing: 1. Preferably a fully certified General Arrangement. If marked as Preliminary it will be rejected unless key dimensions are certified minimum or maximum figures with Engineer's name & date. 2. Overall dimensions 3. Plan view of oil system including location of manway(s). 4. Mounting foot details (including length, width, and thickness). 5. Foundation bolt hole size, location & number. 6. Weight (if not certified advise maximum) and Centre of Gravity dimensioned from suitable datum point (wet & dry as appropriate). 7. Rated oil flow rate (to include maximum & minimum flows on variable speed shaft driven oil pump applications), oil heat load, ISO VG grade and supply pressure. 8. Location, size and connection details of interface connections. 9. For water cooled systems advise flow rate. 10. Area Classification and ATEX details if applicable. 11. Sulzer Order Number (100XXXXXX-XXXX) and Sulzer P.O. Number (4500XXXXXX). This information is given on the purchase order. 12. Provisional maintenance weights & withdrawal dimensions for maintenance purposes 13. When the scope includes a shaft driven oil pump (SDOP) for mounting on the driven equipment the SDOP GA is to be submitted to SPUK separately to the lube-oil system GA. 14. Client decal.
7.6.2	The following may be added during subsequent issues of the GA drawing: 1. Main components identified with Parts List 2. Cooling water connection details (location, size, flange details etc). 3. Lifting point details (thickness, shackle hole size, profile radius, tapping etc). 4. Cable entry positions for motors, heater etc auxiliary junction boxes with box cover opening space requirements. 5. Instruments indicated and adequately supported. 6. Piping adequately braced as detailed in Sulzer Lube Oil System Space Diagram – provided with purchase order. 7. For water cooled systems advise flow rate, inlet temperature, outlet temperature and pressure drop. 8. Final maintenance weights & withdrawal dimensions for maintenance purposes. 9. Earthing boss details.

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7.7	Flexible Coupling GA Drawing
7.7.1	The following should be contained on the first issue of the GA drawing: 1. Preferably a fully certified General Arrangement. If marked as Preliminary it will be rejected unless key dimensions are certified minimum or maximum figures with Engineer's name & date. 2. Coupling drawing to indicate dimensions for both D.B.S.E.(distance between shaft ends) and D.B.C.F.F (distance between coupling flange faces) or other combined variants when integral hubs are used. 3. Driver and driven shaft end geometries to be shown (in chain dot detail) on coupling drawing. 4. Pump Bore & Keyway dimensions (with reference to Sulzer drawings used for the application), Details of taper when applicable. 5. Parts identified and Parts List with torque values for user serviceable fasteners. 6. For hydraulic fit couplings specify material and mechanical properties, drive-up dimension, "O" ring groove details, oil injection connection details. 7. Speed, Power, Safety Factor, weight, half masses & centres of gravity, mass elastic data to include transverse inertia and polar inertia (distributed to each shaft end) and torsional stiffness, maximum & transient torque limitations. 8. Sulzer Order Number (100XXXXXX-XXXX) and Sulzer P.O. Number (4501XXXXXXX). This information is given on the purchase order.
7.8	Mechanical Seal GA Drawings
7.8.1	1. Preferably a fully certified General Arrangement. Aspects to be marked as Preliminary if necessary to indicate the possibility of changes. 2. Overall sizes and pump interface dimensions, PCD, N° of holes & size, stuffing box details, shaft details with tolerances. 3. Direction of rotation (or indication of being bi-rotational). 4. Drive arrangement including torque figures, shaft drilling details for dog point screw, shaft recess requirements & taper ring drive arrangement details etc. 5. Seal plate connections located in three axes (identified relative to direction of rotation if handed). 6. Materials of construction with Parts List. 7. Weight and indication of lifting point(s) 8. Mass of rotating parts. 9. API Seal Piping Plan details. 10. Location, size and connection details of interface connections. 11. Seal flush and quench flow rates 12. Barrier fluid details (fluid type, pressure, flow rate & normal & maximum seal loop temperatures). 13. Sulzer Order Number (100XXXXXX-XXXX) and Sulzer P.O. Number (4501XXXXXXX). This information is given on the purchase order. 14. Speed (range), suction pressure, stuffing box pressure (normal, minimum & maximum). 15. Seal design pressures (static, dynamic & seal plate). Force and direction of out of balance pressures. 16. Permissible shaft axial movement for static & dynamic conditions. 17. If Mech Seal has throttle bush Sulzer preference is for floating type (fixed type bushes are to be specifically discussed & agreed with Sulzer). For Reverse Osmosis applications the throttle Bush/Sleeve clearance is to be increased. For vertical units a carbon disaster bush is preferred with adequate clearance. 18. Permissible radial concentricity tolerance including clearance for pumping scroll and disaster bush when fitted. 19. Client decal.

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7.9	Seal System GA Drawings	
7.9.1	The following should be contained on the first issue of the GA drawing: 1. Preferably a fully certified General Arrangement. If marked as Preliminary it will be rejected unless key dimensions are certified minimum or maximum figures with Engineer's name & date. 2. Overall dimensions 3. Plan view of system. 4. Mounting foot details (including length, width, thickness). 5. Foundation bolt hole size, location & number. 6. Weight wet & dry (if not certified advise maximum). 7. Centre of Gravity wet & dry dimensioned from suitable datum point. 8. Location, size and connection details of interface connections. 9. Design pressures and temperatures. 10. For water cooled systems advise flow rate. 11. Area Classification and ATEX details if applicable. 12. PED category. 13. Sulzer Order Number (100XXXXXX-XXXX) and Sulzer P.O. Number (4501XXXXXX). This information is given on the purchase order. 14. Client decal.	
7.9.2	The following may be added during subsequent issues of the GA drawing: 1. Main components identified with Parts List 2. Instruments indicated and adequately supported. 3. Auxiliary connection details (e.g., air, nitrogen, barrier fluid top-up etc). 4. Earthing boss details.	
8.0	Manufacturing Record Book (MRB)	
8.1	The MRB shall mean a collection of certification and test reports compiled by the Supplier to verify compliance with the specified requirements.	
8.2	An MRB Index shall be submitted to Sulzer for review. Suppliers are required to use the "Supplier MRB Index" (LPE-940) This should take into full account the certification requirements outlined in the ITP. Assembly of the MRB should only begin once the Index is approved by Sulzer. The MRB shall be collated in such a manner so as to enable immediate traceability of the certification/test reports to the equipment/materials being supplied.	
8.3	Documentation/Certification required shall be identified in the contract and/or standards to which the equipment is to be manufactured.	
8.4	Original or verified copies of original test reports or certificates are required in all cases unless agreed otherwise in writing by Sulzer Product Quality Department. All test reports and certificates shall be complete, legible and suitable for photocopying or electronic scanning.	
	a)	An original test report or certificate is defined as the face document with original signature, stamps and endorsements where applicable
	b)	A verified test report or certificate is one that is signed and dated by a responsible person in the Supplier's Quality Department, verifying the document as a true copy of the original manufacturers certificate
	c)	Where Independent Inspection Authority endorsed certificates are required, copies of such certificates shall be re-endorsed by the same inspection authority
8.5	Unless otherwise specified all documents shall be in the English language or if this is not possible, accompanied by a certified English language translation.	
8.6	The Supplier's Quality representative shall endorse each test report or certificate to signify compliance.	

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8.7	The Supplier shall have sole responsibility for ensuring that all documents provided by their sub-suppliers are incorporated into the MRB in accordance with the requirements of this specification.	
8.8	Certification requirements for electrical equipment in hazardous areas are defined within Sulzer Specification PS-1301 "Certification of Electrical Equipment for Installation in Hazardous Areas". When the scope of supply includes such electrical items then the Supplier or their sub-supplier shall fill in and submit as part of the MRB, a typed electronic copy of the "Supplier Hazardous Area Schedule" (LPE-329) This schedule shall list all such electrical equipment including but not limited to:-	
	-	Purchase Order
	-	Equipment or Tag Number
	-	Description
	-	Manufacturer
	-	Model/Type Number
	-	Hazardous Area Classification
	-	Hazardous Area Certificate Issue Authority
	-	Hazardous Area Certificate Reference Number
	-	Date of Issue
	-	Date of Expiry
	-	Declaration of Conformity Reference Number
8.9	Review	
8.9.1	The MRB shall be compiled progressively as the documentation becomes available.	
8.9.2	Review of the documents by Sulzer may be carried out progressively during inspection and surveillance visits. The final review will be prior to release of the equipment/materials after final inspection.	
8.10	Traceability	
8.10.1	All suppliers are required to fill in the "Supplier Traceability Record" (LPE-263) & submit a typed electronic copy for review as part of the MRB. This is required to ensure full traceability between parts and certification. One record is to be filled in per unit.	
8.10.2	Items to be recorded as a minimum are customer tagged items along with the following:-	
	-	Instruments
	-	Valves
	-	Pumps
	-	Motors
	-	Heaters
	-	Coolers
	-	Filters
9.0	Quality Release	
9.1	Quality Release is documented authorisation signifying that the supplier has satisfactorily:-	
	a)	Completed and submitted the MRB or provided a date for submission.
	b)	Completed all inspection and tests required by the contract.
9.2	Availability of equipment for quality release is signified by the completion of a Sulzer Quality Release Form, LPE-147 by the supplier or their sub-suppliers.	

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9.3	The completed Quality Release is to be forwarded to Sulzer Project Management.
9.4	Release of equipment/materials by Sulzer is signified by the returning of the authorised Quality Release to the Supplier, enabling the supplier to apply for despatch instructions.
9.5	A Copy of the completed and authorised Quality Release is to accompany the equipment/materials to their destination.
9.6	The Supplier shall not allow equipment or material to be despatched from their premises or their sub-suppliers without an authorised Quality Release from Sulzer. Equipment despatched without authorisation may be rejected or stored at the Supplier's cost until such authorisation is given.

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Appendix

Final Inspection Checklist – All Equipment			
Sulzer No.		Sulzer P.O. No.	
Supplier		Sulzer Ref. No.	
Inspection Agency		Report No.	
Inspector		Inspection Date	
Location		Drawing No.	

	Requirement	Status
1.	Check compliance with GA drawing, including overall dimensions, interface dimensions, weight, holding down bolt hole locations, and report exceptions together with drawing number and revision.	
2.	Are all items on purchase order available? If not detail missing items. Special attention to be paid to loose items which are not separately identified on the Sulzer purchase order.	
3.	Check that loose items are detailed on packing list.	
4.	Check compliance with P&ID (if applicable) and report exceptions together with drawing number and revision.	
5.	Check compliance with Terminal Block Diagram (if applicable) and report exceptions together with drawing number and revision.	
6.	Check tagging of parts to P&ID Diagram and detail exceptions.	
7.	Is corrosion protection in place in accordance with agreed procedure? Include procedure number and revision.	
8.	Check for damaged or corroded equipment and report status.	
9.	Check make and model of all instruments against drawing or instrument list (if applicable).	

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10.	Check paint colour and dry film thickness (sample) to procedure. Record procedure number and revision.	
11.	Check general standard of workmanship and finish and report items which are not acceptable.	
12.	Photograph from 4 sides and take additional photographs of any problem areas	
13.	Is all bolting to the correct specification i.e. M8.8, A4, A2 etc.	
14.	Nameplates fitted and in accordance with Sulzer reviewed drawing?	
15.	Are cable glands in accordance with Sulzer reviewed drawing?	
16.	CE and ATEX plates fitted if applicable?	
17.	Check that instrument heads are not loose.	

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Final Inspection Checklist – Additional Requirements for Lube Oil Systems and Packaged Electrical Equipment		
	Requirement	Status
18.	Check earth bonding throughout the package.	
19.	Check size of earth bonding is in accordance with drawings.	
20.	Check system and cooler has been flushed and a certificate generated.	
21.	Is there an earth stud for connecting lube oils system earth to Sulzer skid?	
22.	Check gauges are marked in correct units.	
23.	Check relief valve are traceable to certification and set at pressure shown on drawings.	
24.	Are plugs fitted to all open connections including metal plugs in all block and bleed valves.	
25.	Do cable trays have edging strips?	
26.	Do cable trays have sharp edges?	
27.	Are cables adequately secured to cable tray?	
28.	Check IS and non IS cables are segregated.	
29.	Are pipe and tube fittings in the correct material and by the agreed manufacturer?	
30.	Are pipe and tube fittings secure?	
31.	Direction arrow fitted and rotation correct?	

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Final Inspection Checklist – Additional Requirements for Motors		
	Requirement	Status
32.	Rotor locking clamp fitted?	
33.	Rotation arrow fitted and direction correct?	
34.	Magnetic centre marked? (horizontal sleeve bearing motors only)	
35.	Where bearings have oil connections carefully check size, rating, material and position of oil supply and return connections are in accordance with Sulzer approved drawings.	
36.	Quantity, size and cable entries of all junction boxes to be checked against Sulzer approved drawings.	
37.	Junction boxes clean internally?	
38.	Junction boxes identified in accordance with Sulzer approved drawings?	
39.	Are pipe and tube fittings in the correct material and by the agreed manufacturer?	
40.	Are pipe and tube fittings secure?	
41.	Do cable trays have edging strips?	
42.	Do cable trays have sharp edges?	
43.	Are cables adequately secured?	
44.	Check earth bonding throughout the package.	
45.	Check size of earth bonding is in accordance with drawings.	
46.	Are vertical jacking screws & alignment dowels provided?	